

BOTANICAL GAZETTE.

VOL. IX.

JANUARY, 1884.

No. 1.

A Botanical Holiday in Nova Scotia. I.

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[That the following notes do but scant justice to the botany, and still less to the scenic beauties of a comparatively little traveled region, I am fully aware, but give them in the earnest hope that they may serve as a stimulus to induce some one more able than myself to undertake such a work. In their preparation I have to acknowledge the valuable assistance of Professor Macoun, while to Mr. Sereno Watson and Professor D. C. Eaton, for aid in determining some of the plants enumerated, thanks are also due.]

Granted a three months' leave of absence from my official duties, came the question how best to spend it. The numerous methods suggesting were finally sifted down to two: a visit to the "old country," as we Canadians, copying our English sires, still love to call the land of their birth, or a trip through Nova Scotia with my friend, Professor Macoun, who was about to make an investigation of the flora of that region. A love of nature, combined with a knowledge of the fact that a chance to "do" the Maritime Provinces in such excellent company, both socially and scientifically, might never occur again, decided me in favor of the latter scheme.

Having joined company with the Professor and his son at Montreal, we left there by the Intercolonial Railway on the evening of June 7th, 1883, and in the morning found ourselves speeding swiftly through the picturesque scenery of the lower St. Lawrence. Not the least striking feature of the landscape were the typical French villages, where the quaint old houses, with their gaily painted, sharp pitched roofs, curving gracefully from the projecting eaves, nestled so quietly, unchanged since the days when the Bourbon lilies waved above "La Nouvelle France." Everywhere along the track we noticed *Rhododendron Rhodora*, Don, in great abundance, and often for miles, the bogs, stretching far as the eye could see on each side, were a mass of purple

bloom, pricked out with snowy tufts, the tops of *Eriophorum vaginatum*, L. The stout stems of *Veratrum viride*, Ait. were shooting up in all the low meadows, while *Antennaria plantaginifolia*, Hook. carpeted the dry knolls. At Rimouski we turned our backs on the St. Lawrence and journeyed south to the valley of the Metapediac. If, as is said, the name of this famous salmon stream denotes "musical waters," the title is well deserved. Winding through the green valley in a constant succession of rapids for nearly sixty miles we watched its sparkling waters, so strangely pent in by the mountains rising in every shape, from six to eight hundred feet on either hand. The season was backward and a few patches of snow were still lying along the banks, and many of the poplars were just beginning to put forth their leaves. Evening saw us across the Restigouche and into New Brunswick, while breakfast time next morning found us at Amherst and in Nova Scotia. A few hours more and we had reached Truro, our first regular botanizing ground.

Having settled ourselves at an hotel, our first thought was to explore the town, a bustling place with pleasant streets, extensively adorned with English elms, but *abeunt studia in mores*, and we were soon making for the fields and woods beyond. The ground, as well as the atmosphere, was remarkably humid, and it did not take long to discover the tendency of Western bog plants to grow here on the hill sides. Sphagnum was everywhere, *S. acutifolium*, Ehrh., in its various forms, being the leading species. The scarcity of many of our commonest weeds at once struck us. *Verbascum Thapsus*, L., *Cynoglossum officinale*, L., *Cnicus arvensis*, Hoff., *Echinospermum Lappula*, Lehm., and others were conspicuous by their absence, their places being supplied by *Carum carui* L., *Ranunculus acris*, L., *Leontodon autumnale*, L., and *Nepeta Glechoma*, Benth., which covered the pastures, roadsides and railway tracks. *Kalmia angustifolia*, L., with *Vaccinium Canadense*, Kalm and *Pennsylvanicum*, Lam., engrossed the open, while *Maianthemum Canadense*, Desf., and *Cornus Canadensis*, L., filled the woodlands. The noble hardwood forest was replaced by one composed of *Abies nigra*, Poir., *alba*, Mx., *balsamea*, Marshall, and *Canadensis*, Mx., *Pinus resinosa*, Ait., *Strobus*, L., *Larix Americana*, Mx., and *Betula papyracea*, Ait., and *alba*, var. *populifolia*, Spach.; *Fagus ferruginea*, Ait., *Acer saccharinum*, Wang. and *rubrum* L., being rare. Ferns were very abundant and well represented by *Polypodium vulgare*, L., *Pteris aquilina*, L., *Asplenium Filix-fœmina*, Bernh., *Phegopteris polypodioides*, Fée and *Dryopteris*, Fée, *Aspidium cristatum*,

Swz., *Thelypteris*, Swz., *spinulosum*, Swz. vars. *intermedium*, Eaton and *dilatatum*, Hook., *marginale*, Swz., and *acrostichoides*, Swz., *Onoclea sensibilis*, L., and *Struthiopteris*, Hoff., *Dicksonia punctilobula*, Kunze, *Osmunda Claytoniana*, L., *cinnamomea*, L., and *regalis*, L. and *Botrychium Virginicum*, Swz. *Carex vulgaris*, Fries, wonderful in the innumerable variety of forms it assumed, was the commonest of the sedge family, with *C. pallescens*, L., a "good second." *Cerastium arvense*, L., whitened the meadows with flowers often half an inch in diameter, and a, probably introduced, form of *Ranunculus repens*, L., was a pestilent weed. Seemingly more at home in dry than wet ground, this Buttercup occurred both at Truro and in most parts of the province, not only in fields and along the streets, but in swamps and woods far removed from any signs of habitation. It differed markedly from our Ontario plant in being much less coarse in appearance, with flowers larger and often partially double. It was also less hairy and threw out runners less freely, while the divisions of the leaf, which were less acute, had whitish markings at the sinuses.

One of the best botanical localities in the neighborhood of Truro was a little stream, called Leper's Brook. At its upper end, shut in between frowning cliffs, was a picturesque cascade, from which the waters descended by a series of rapids, through a deep wooded ravine, for nearly a mile, until they emerged in the open on which is located the town. On the low ground at its embouchure were found *Ranunculus abortivus*, L. var. *micranthus*, Gr. and *Nardosmia palmata*, Hook., while the delicate flowers of *Primula Mistassinica*, Mx. studded the springy hillside, which was covered with *Bartramia ithyphylla*, Brid. in magnificent fruit. Along its banks grew *Stellaria borealis*, Bigel., and, close to the edge, in crevices of the rocks, *Carex torta*, Boott seemed at home, jostling superb specimens of *Streptopus amplexifolius*, DC., whilst a little farther up from the water *S. roseus*, Mx. showed its purple blossoms with *Viola blanda*, Willd. nestling about its roots. On the wooded slopes the drooping racemes of *Acer Pennsylvanicum*, L., hung gracefully above masses of *Lonicera ciliata*, Muhl. and *caerulea*, L., which in turn concealed *Thalictrum dioicum*, L., *Ribes lacustre*, Poir., and *prostratum*, L'Her., *Epigaea repens*, L., (past flowering), *Danthonia spicata*, Beauv., and *Equisetum scirpoides*, Mx. The sides of the ravine and the cliffs about the falls formed a perfect paradise for mosses, liverworts and lichens, in which the Professor fairly revelled. Covering the ground, rocks and trees, they were embarrassing in their multiplicity, this locality alone yielding nearly two hundred

species, among which were *Diphyscium foliosum*, Wéb. & Mr., *Orthotrichum Ludwigii*, Schw., *Dicranum subulatum*, Hedw., *Bryum Duvalii*, Voit., *Hypnum pulchellum*, Dicks., *Pogonatum urnigerum*, Brid., *Grimmia conferta*, Funk., *Scapania undulata*, L., and *compacta*, Aust., *Jungermannia cordifolia*, Hook., and *Sticta crocata*, Ach.

The railway track and fields bordering it, a little west of the town, enriched our portfolios with *Stellaria graminea*, L., *Luzula pilosa*, Willd., *Carex vitilis*, Fries, *umbellata*, Schk., *Novæ Angliæ*, Schw., *tenella*, Schk., *Deweyana*, Schk., *Emmonsii*, Dew., *arctata*, Boott, *flava*, L., and *Houghtonii*, Torr., *Poa debilis*, Torr. and *annua*, L., and *Equisetum sylvaticum*, L. Here, too, were large patches of *Bacomyses roseus*, Pers. hiding with its beautiful flesh-colored apotheciæ the sterile clay banks. In the woods a few miles to the east, we picked up *Crataegus tomentosa*, L., *Trillium cernuum*, L., *Oakesia sessilifolia*, Watson, and *Carex scabrata*, Schw. and *gracillima*, Schw., and in a little creek running through a dense tamarack swamp, richly fruited specimens of *Fontinalis Lescurii*, Sulliv., and *disticha*, H K. & Wils.

A jaunt to the salt marshes at the head of Cobequid Bay introduced us to a very choice assemblage of saline plants, but owing to the earliness of the season, most of them, though quite recognizable, were unfit to take. We managed, however, spite of the mosquitoes, which were especially virulent, to secure fine specimens of *Triglochin maritimum*, L., *Carex Norvegica*, Schk. and *maritima*, Vahl. and *Hierochloa borealis*, R & S. In shallow ponds and wet places along the road, during our homeward drive, were gathered *Menyanthes trifoliata*, L., *Carex teretiuscula*, Good., *sterilis* Willd., *trisperma*, Dew., and *aquatilis*, Wahl., *Panicum latifolium*, L., and *Glyceria nervata*, Trin.

A week saw so much sameness in the area for convenient field work, that, with note-books enriched with the names of 366 flowering and vascular cryptogamic plants and 254 of the lower orders, we turned our faces southward.

Three hours of railway travel and we were at Halifax, that city by the sea, with its fair and famous harbor, and after narrowly escaping being torn to pieces by a mob of clamorous hackmen, were soon comfortably domiciled. The city is a place of great military strength, and from the strongest of the works, the citadel, occupying an eminence in the centre, is the best view of it and its surroundings to be had. To the west lie the placid waters of the Northwest Arm, while the ship-encumbered Harbor and Bedford Basin make the southern and eastern boundaries of the penin-

sula on which the city is built. Far beyond stretch the distant hills and forests as a background, and at one's feet lies a foreground of busy streets, while McNab and Georges Islands with their frowning fortifications help well to break the watery middle distance. The drives around Halifax are numerous and charming, and the city itself possesses many objects of interest, chief among which I would rank the Public Garden, where, differing from too many of them, nature is not made entirely subordinate to art.

Our first day here was devoted to an examination of Point Pleasant, as the extremity of the Halifax Peninsula is named. The vegetation had changed, and we made many additions to our list. Plenty of oak, *Quercus coccinea*, Wang. var. *tinctoria*, Gr., was mixed with the evergreens which still formed the woods, while the most noticeable among the shrubs were *Hamamelis Virginiana*, L., *Rhus typhina*, L., *Vaccinium corymbosum*, L., var. *pallidum*, Gr., *Gaylussacia resinosa*, T. & G., and the fragrant *Myrica cerifera*, L. Willows were but sparsely represented by *Salix cordata*, Muhl., *discolor*, Muhl., and *livida*, Wahl. var. *occidentalis*, Gr., their places in the low grounds and along rivulets being taken by *Alnus incana*, Willd. and *viridis*, DC., *Viola lanceolata*, L., though seeming to prefer boggy, was found also in dry, stony soil; and *sagittata*, Ait., its broadly halberd-shaped leaves differing greatly from the oblong lanceolate ones of the form I had been accustomed to see, occurred in flower and seed. *Lechea minor*, Walt. was not uncommon in dry places, and *Stellaria uliginosa*, Murr. filled a swampy patch just outside the city. Of that subject of so many charming superstitions, the clover, a species not heretofore recorded in Canada was found in *Trifolium medium*, L., easily distinguished from *pratense*, L. by its long stalked heads. *Houstonia cœrulea*, L., covered the grassy banks and meadows, its pale lilac flowers forming a marked and very pleasing feature in the landscape, and *Potentilla tridentata*, Soland., vied with it in profuseness on rocky ground. An Aralia, so tall and shrubby that we could hardly believe it to be *A. hispida*, Vent., was growing close to the roadside, where also was noticed *Rumex salicifolius*, Wein. The sandy banks in places were completely clothed with *Vaccinium Vitis-Idæa*, L. and *Juniperus Sabina*, L. var. *procumbens*, Pursh, while *Clintonia borealis*, Raf., here and there in the woods, occupied the ground to the exclusion of all other plants. Peeping above the glossy leaves of a patch of this kind, its beautiful rose-colored blossoms contrasting strangely with the delicate lemon-colored umbel of the lily, we saw our first orchid in *Cypripedium*

acaule, Ait. Every ditch was choked with *Alopecurus geniculatus*, L. and its congener *A. pratensis*, L. was common along the roads and in fields, forming with *Anthoxanthum odoratum*, L. the common pasture grass. As at Truro, *Carex vulgaris*, Fries, was most prominent among the carices, but *debilis*, Mx., and *folliculata*, L. were fresh additions to this genus.

An excursion to McNab's Island, at the mouth of the harbor, was next in order, and having been ferried across the Northwest Arm to Herring Cove, we hired a fishing boat for the trip. Here, while waiting for our men to get ready, the Professor's ever watchful eye detected a fresh treasure in *Montia fontana*, L., which very interesting plant grew plentifully on a moist grassy slope above the sea, and was in prime seed. In many of the island swamps the grass, in spots, was hidden by the profusion of *Viola cucullata*, Ait., which exhibited a number of variations, in one locality white flowers almost entirely replacing the purple. *Archangelica Gmelini*, DC. was just coming into flower along the gravelly shore, and *Brassica Rapa*, L., covered an old field, but in other respects the flora was almost identical with that of the mainland. Returning, we made an exploration of the high, rocky bluffs above the cove, and were amply rewarded by the discovery of *Hudsonia ericoides*, L., *Arenaria Groenlandica*, Spreng., *Empetrum nigrum*, L., *Corema Conradii*, Torr., *Dicranum spurium*, Hedw. and *majus*, Turn., and *Pogonatum brevicaule*, Brid.

Since first settling down to work, we had been constantly on the look out for a genuine peat bog, and on a tramp over the road leading from the head of the Arm along the Chain Lakes, we were at last lucky enough to strike one. Lying close to the road it held a perfect harvest of new things, and we were able fairly to load ourselves with the spoils. *Viola primulæfolia*, L. and *Arethusa bulbosa* L., were abundant and in full flower, while *Habenaria tridentata*, Hook., was just coming into bloom. *Utricularia intermedia*, Hayne, and *Gerardia purpurea*, L. were also there, and the sedges, numerous and valuable, included *pauciflora*, Lightfoot, *exilis*, Dew., and *irrigua*, Smith. This day was still farther marked as a red letter one by the finding, at the head of Chocolate, one of the Chain Lakes, of *Ilex glabra* Gr., a plant, which, though reported, we could hardly persuade ourselves could exist here.